

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 12. This sheet, which includes Fig. 12, replaces the original sheet including Fig. 12.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-20 are pending in this case. Claims 1, 7, and 13-20 are amended for clarification with support in the originally filed disclosure at least at Fig. 1 and the related descriptions. Thus, no new matter is added.

In the outstanding Office Action, Claims 1, 2, 5, 7-10, and 18-20 were rejected under 35 U.S.C. § 102(b) as anticipated by Sakakima, et al. (U.S. Patent No. 6,005,798, herein "Sakakima"); Claims 3-5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sakakima in view of Chang, et al. (U.S. Patent No. 5,294,287, herein "Chang"); Claim 6 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sakakima in view of Chang, further in view of Grollier, et al. ("Switching a spin valve back and forth by current-induced domain wall motion", herein "Grollier"); Claims 11 and 12 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sakakima in view of Wang, et al. (U.S. Patent No. 6,713,195, herein "Wang"); Claim 13 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sakakima in view of Chang, further in view of Wang; and Claims 14-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sakakima in view of Zhu, et al. (U.S. Patent No. 5,734,605, herein "Zhu").

Fig. 12 is amended to correct an inadvertent erroneous recitation of "(In_{0.2} Ga_{0.3})As" instead of "(In_{0.2} Ga_{0.8})As." The correction is supported in the originally filed disclosure at least at paragraph [0089] of the published Specification. Thus, no new matter is added.

Applicants respectfully traverse the rejections of the pending claims.

Claim 1 recites, *inter alia*, "the magnetization direction of the third magnetic body is controlled in such a manner that a **current is applied to pass through the first and second microjunction interfaces**, such that a **magnetic domain wall present between the first and**

second magnetic bodies is moved within the third magnetic body in the same direction as that of the current or in the direction opposite to that of the current by the interaction between the magnetic domain wall and the current.”

The Response to Arguments, at page 15 of the outstanding Office Action, asserts that the previous recitation in Claim 1 that “a current is applied across microjunction interfaces” is fully described by Sakakima, because a magnetic field of the current that flows through the conductor line 5 passes along the microjunction interfaces, and the magnetic field is an “element” of the current.

While Applicants disagree with the assertion, Claim 1 is amended to clarify that “a **current is applied to pass through the first and second microjunction interfaces.**”

The recitation of amended Claim 1 precludes the assertion of “elements” of current passing through the microjunction interfaces.

As discussed in the previous response, as shown at Fig. 4 and described at column 14, lines 26-27, of Sakakima, current is caused to flow through the conductor line 5.

However, current flow through the conductor line 5 is clearly depicted, at Fig. 4 of Sakakima, to be **along the top** of the memory and amplifying device, **above the magnetoresistive change portion 11, rather than “applied to pass through the first and second microjunction interfaces,”** as recited by amended Claim 1.

Further, as shown at Fig. 7 of Sakakima, for example, a non-magnetic metal film 2 surrounds the magnetic film 3, which is asserted as the third magnetic body as defined by Claim 1, in the region asserted to be “sandwiched” by the first and second magnetic bodies (1’ above and below).

However, because of the **non-magnetic metal film 2** between each of the magnetic films 1’ and the soft magnetic film 3, asserted as the first, second, and third magnetic bodies, respectively, it would be impossible in Sakakima to control “the magnetization direction of

the third magnetic body...in such a manner that...a magnetic domain wall present between the first and second magnetic bodies is moved within the third magnetic body,” as recited by amended Claim 1.

Finally, as shown at Figures 7A and 7B, which are cited by the outstanding Office Action, at page 2, the two magnetic films 1' that are asserted to teach the **first and second magnetic bodies** as defined by Claim 1 are not formed “**with a magnetization direction antiparallel,**” as recited by Claim 1. Instead, as shown at Figures 7A and 7B and described at column 15, lines 23-38, of Sakakima, the number of magnetic films 1' in which magnetization is inverted relates to the value being stored in the multivalued memory device. That is, the coincidental arrangement, shown at the right side of Fig. 7A, for example, is not a teaching in Sakakima of a current injection-type magnetic domain wall-motion device comprising “**a first magnetic body, a second magnetic body with a magnetization direction antiparallel to that of the first magnetic body,**” as asserted by the outstanding Office Action.


Because Sakakima does not fully describe at least the above-discussed features of Claim 1, as required by MPEP § 2131, Applicants respectfully request that the rejection under 35 U.S.C. § 102(b) of Claim 1 and Claims 2, 5, 7-10, and 18-20, which depend therefrom, be withdrawn.

Claims 3-6 and 11-17 depend from Claim 1 and, therefore, patentably define over Sakakima for at least the same reasons as Claim 1. Further, Chang, Grollier, Wang, and Zhu, which are additionally asserted against Claims 3-6 and 11-17, fail to cure the above-discussed deficiencies of Sakakima at least with regard to Claim 1. Thus, Applicants respectfully request that the rejections of Claims 3-6 and 11-17 under 35 U.S.C. § 103(a) be withdrawn.

Accordingly, the outstanding rejections are traversed and the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is, therefore, respectfully requested.

Respectfully submitted,

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